

Observations on the Breeding in Captivity of a Pair of Lowland Gorillas

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(Plates I-III; Text-figures 1 & 2)

ON December 22, 1956, a pair of lowland gorillas, *Gorilla gorilla gorilla* (Savage & Wyman), gave birth to a healthy female baby in the Columbus Zoological Garden, Columbus, Ohio. This was the first reported birth of a gorilla bred and born in captivity. As a student of veterinary medicine at Ohio State University I have had the good fortune to observe the parents of this baby from the time of their arrival at the Zoo to the present, and also to observe the baby in the first few minutes of its life and subsequently. The major facts concerning the development of the parents in captivity, their breeding behavior and the birth of their offspring are recorded here in an effort to cast some light on the propagation of gorillas in captivity.

PRE-BREEDING HISTORY

The Columbus Zoo's gorillas are known as "Baron" and "Christina." They were captured near the end of 1950 in the French Cameroons, by the late Bill Said of Columbus, Ohio, and arrived in New York on December 22, 1950. Shortly thereafter they were bought by the Columbus Zoo and arrived in Columbus on January 8, 1951.

On arrival, Baron weighed approximately 72 pounds and was estimated to be a little more than four years old. Christina weighed about 21 pounds and was estimated to be a year and a half old. A third gorilla was received at the same time, a small male named "Christopher," about the same age and weight as Christina.

All three were in poor condition. They were suffering from severe upper respiratory infections and in addition Christopher had gunshot wounds in one arm and one leg. However, they were immediately treated by the Zoo Veterinarian and after a time responded well to treatment.

The only quarters available at the time of their

arrival were temporary ones with poor lighting and sanitary facilities and with very irregular temperature control. Baron was placed in one cage, and in the adjoining cage, with only bars separating them, Christina and Christopher were housed together. During the whole of their stay in these quarters they could see each other at all times, but they were never allowed to enter each other's cage.

In the spring of 1954 they were moved to semi-permanent quarters in another building, and early in the summer Christopher was traded to a European zoo. Facilities were much better in the new quarters, which were constructed of concrete block and steel bars. Again Baron and Christina were placed in adjoining cages, this time separated by a solid wall with a barred door through which they could always see each other and through which they could pass their fingers. It was in these quarters that they began to exhibit some sexual activity.

Baron and Christina remained in this semi-permanent installation until the late summer of 1956 when they were moved to their permanent quarters in the newly-built Ape House. Here they have essentially the same housing arrangements as in the semi-permanent quarters.

When they first arrived at the Zoo they were reluctant to eat, but little by little regained appetite. They were placed on a varied diet which was competently adjusted to their daily routine by Don Jones, their regular keeper. Table 1 gives their typical meals.

In addition to the items shown in Table 1, a commercial vitamin preparation was usually given to both animals once a day. The diets were increased and adjusted as the animals grew older and larger, but the diet in Table 1 is typical for 1951 to 1953.

According to his hypothetical birth date of

TABLE 1. TYPICAL MEALS OF YOUNG GORILLAS, 1951-1953.

	Baron	Christina
<i>Morning</i>		
Cereal (Rice, Cream of Wheat or Rolled Oats, Raisins)	3 to 4 cups	3 to 4 cups
Lettuce	½ to 1 head	½ to 1 head
Carrots	4	3
Apples	3 to 4	2
Bananas	8 to 10	3
Grapefruit	1	½ to 1
Eggs (raw in milk)	2	2
Pear	1	1
Milk	1 to 2 pints	1 to 2 pints
Bread	½ to 1 loaf	½ loaf
<i>Noon</i>		
Peanut or applebutter sandwiches	1 to 2	1
Navy beans, cooked	1 pint*	1 pint*
Prunes	4	4
Meat (chicken or beef, broiled)	½ pound	½ pound
<i>Evening</i>		
Lettuce	½ to 1 head	½ head
Bread	1 loaf	½ loaf
Apples	3	2
Carrots	6	4
Sweet potato, baked	6*	6*
Irish potato, baked or boiled	6	4
Celery	12 stalks	6 stalks
Oranges	1 to 2	1
Bananas	10 to 15	8 to 12
Grapes	½ pound	½ pound
Milk	1 pint	1 pint

*Two to three times a week.

October, 1946 (Yerkes, 1951), Baron was 4 years and about 2 months old when he was received at the Columbus Zoo. He had an unusually prognathous appearance for a lowland gorilla, and his head has always been disproportionately large in relation to his body. It has always been noticeable that the facial and cephalic features of Baron and Christina are decidedly different, over and above their sexual differences, but it is well known that there is wide variation among gorillas (Coolidge, 1929).

Baron's saggital and occipital crests began to develop when he was about 5½ years old and were fully developed at the age of 10. He lost his deciduous incisors at 6½ years and his canine teeth at 10½. He progressed steadily in weight and in December, 1956, weighed about 300 pounds, ± 10 pounds. His appearance at that

time is shown in Pl. I, Fig. 1. As gorillas go, Baron has always been inclined to leanness.

According to her hypothetical birth date of August, 1949 (Yerkes, 1951), Christina was about 1½ years old when she came to the Columbus Zoo. She lost her deciduous incisors at 5 years. She has always been rather small and had a tendency to obesity even when on a restricted diet. She weighed approximately 200 to 210 pounds at the time of the birth of her baby. Her appearance on December 22, 1956, is shown in Pl. I, Fig. 2.

From the beginning Baron was playful and quite active. Every inch of his cage was used for exercise. He had acquired the habit of pounding his chest when he arrived at the Zoo, and indulged in it frequently. He became used to his daily routine and any deviation from it resulted in severe diarrhea. He had a dislike for water from a hose, but not a fear of it. Toward strange objects in his cage he demonstrated inquisitiveness but rarely what could be interpreted as fear.

Christina was always quieter than Baron, but could not be trusted as far as he could. When the hand or arm of anyone but her regular keeper got too close, she sometimes appeared slightly vicious. She was always much less physically active than Baron. Unlike him, she developed a fondness for standing in a stream of water. Any change in routine resulted in diarrhea, and strange objects in or out of her cage appeared to frighten her at first, but if they were exposed long enough she became accustomed to them and accepted them.

Both Baron and Christina regularly and easily regurgitate large portions of each meal and then reconsume it. This practice began when they were four to five years old. It is apparently normal in gorillas (Dr. Leonard J. Goss, Moody J. R. Lentz: personal communications).

BREEDING BEHAVIOR

The Female

The first activity between the two animals began as playing through the bars of their adjoining cages, and this was a fairly constant thing from the time of their arrival at the zoo. The first observations of sexual play were made in the spring of 1954 when Christina was about five years old. At that time she began to "present" for the male. Baron would sit on one side of the bar door and she would back up to the bars on all fours, after which the male would carry on digital intercourse with her through the bars. She would emit a low grunt and stand for him. Her sexual drive was variable and no particular pattern was determined. Her menstrual cycle

was also difficult to determine because the only evidence was a few drops of blood on the cage floor, and these could easily be overlooked.

The Male

Baron showed no exceptional interest in Christina until after the other male in the original trio, Christopher, left the Zoo, and then his interest became more active. When the female "presented" for him and he carried on digital intercourse, he emitted a staccato series of grunts which built up to a climax of guttural sounds. In this kind of intercourse he used the third finger of, more often than not, his left hand. He has never been observed to masturbate.

Intercourse

After this sexual play had been observed for some months it was decided to put the two animals together for short periods of time in hope that they would mate. They were first put together on August 10, 1954. They played together for some time, and intercourse was attempted but was not successful, and they were separated. On several other occasions they were put together with the same result. Successful coitus was not achieved until January 9, 1955.

The two animals were turned in together only when the female showed signs of sexual activity by "presenting," and they were usually separated after coitus if the male showed signs of playing rough, which was not infrequently. Sometimes, even though Christina showed signs of sexual activity, she would not stand for the male and this resulted in their fighting and subsequent separation.

Two positions of intercourse were used: dorso-ventrally (Pl. II, Fig. 3) and ventro-ventrally (Pl. II, Fig. 4). At first they used only the dorso-ventral position but as time went on both positions were used about equally.

The male's penis, erect, is about 14 cm. in length and about 1.5 cm. in diameter halfway posterior from the glans penis.

Breeding Record

Records were kept of the sexual activity of the two gorillas and most of the information below was supplied by Keeper Don Jones. It may be summarized as follows:

1954

July 17	Positive signs of sexual activity.
August 10	Put together; unsuccessful attempt at coitus.
September 27	Put together; unsuccessful attempt at coitus.
October 2	Put together; unsuccessful attempt at coitus.

October 31	Signs of sexual activity, but not put together.
December 5	Signs of sexual activity, but not put together.

1955

January 8	Signs of sexual activity, but not put together.
January 9	Successful coitus.
January 10	Coitus.
February 5	Put together; no coitus.
February 11	Coitus.
February 12	Signs of sexual activity, but not put together.
February 13	Signs of sexual activity, but not put together.
March 9	Coitus.
April 6	Coitus.
April 7	Coitus.
April 8	Coitus.
May 10	Signs of sexual activity, but not put together.
June 6	Signs of sexual activity, but not put together.
August 28	Signs of sexual activity, but not put together.
September 24	Coitus.
December 5	Put together; no coitus.
December 16	Coitus.
December 17	Coitus.

1956

January 15	Coitus.
January 16	Coitus.
January 17	Coitus.
January 18	Coitus.
February 15	Coitus.
February 16	Coitus.
February 17	Put together; no coitus.
March 11	Coitus.
March 12	Coitus.
March 13	Coitus.
April 6	Coitus.
April 7	Coitus.
April 8	Coitus.

PREGNANCY AND PARTURITION

Physical Changes

Conception probably took place on April 6, 7 or 8, 1956; this supposition is based on the fact that soon afterward Christina ceased to show signs of sexual activity, menstrual flow was no longer observed and her temperament changed radically. At this time she was approximately 7 years old and thus, according to present belief, not physically mature. Consequently when changes occurred during her pregnancy it was difficult to differentiate between those of maturity and those of pregnancy.

Pregnancy tests were made at about 120 days of pregnancy under the direction of Robert W. Vesper, DVM, the Veterinarian of the Colum-

bus Zoo. Sixteen *Xenopus* frogs were inoculated with a urine sample. Four frogs died and the remaining twelve showed negative. One rabbit was inoculated with urine but died in six hours. At 200+ days Cuboni tests were made and the results were again negative.

Changes in the female which beyond reasonable doubt can be classified as due to pregnancy were:

Abdomen.— There were no appreciable changes until she had progressed about 120 days, at which time there was a gradual increase in size out of proportion to the rest of her development.

Feet and Ankles.— A definite edema became apparent after about 210 to 220 days of pregnancy; this persisted until almost three weeks after parturition.

Temperamental Changes

Changes in temperament shown by Christina during pregnancy were very noticeable.

She became sullen, irritable and at times even belligerent. She had long periods of depression and lethargy. Whereas once her keeper could scratch her and play with her through the bars, she now stayed quite distant from him. She was acutely responsive to loud noises and was continually irritated by the commotion caused by Baron in an adjoining cage.

Her appetite decreased and remained at a low level all during pregnancy and for about a week after parturition. She began to regurgitate more frequently and only a small portion of the regurgitation was reconsumed.

Her activity declined to a very low point. She frequently sat for long periods of time and stared off into space.

Convulsive Attack

Christina underwent a convulsive attack on December 8, fourteen days before parturition. The timetable of the attack follows:

- 3:00 p.m. A central nervous seizure was noticed by the keeper on duty. Its onset was fairly gradual. There was a shaking of her head and body as if she were taken by chills. She climbed up into her rest cage and sat down, then turned around and slid backwards down onto her bench where she remained, leaning into her rest cage, with both feet on the bench.
- 3:10 p.m. She showed no volitional control of her body. The only reflex found was an eye reflex. She perspired and sali-

vated profusely. No indications of cyanosis were found. She was still standing on her bench, leaning into her rest cage. At this time she was boosted up into the cage by her keepers, and in this new position she lay without moving.

- 3:40 p.m. Volitional control of the right hand, and then of the right arm, began to return.
- 3:50 p.m. Volitional control of the left hand and arm began to return.
- 4:05 p.m. The left leg showed volitional control.
- 5:00 p.m. The right leg showed volitional control.
- 6:00 p.m. She staggered down out of the rest cage and moved with a reeling gait.
- 9:00 p.m. At this time she was in complete control of her faculties. She showed only a small appetite.

PARTURITION

The first signs that were noted, indicative of impending parturition, were on December 20, 1956. She refused her morning feeding and ate only a small part of her evening meal. In the afternoon a clear, serous, vaginal discharge was observed. She was very restless and paced the cage all day.

On December 21 her appetite had not improved but she appeared to be more calm. There was no vaginal discharge.

On the morning of December 22, 257 to 259 days after probable conception, she was offered food at 8 o'clock. At this time she was standing on all fours in her "rest cage," a small cage four feet above the floor of the main cage and behind and adjoining the main cage. She made no attempt to come down and investigate her food.

She was checked again at 8:30 a.m. and her food was untouched and she was still standing quietly, in the same position.

At 8:50 a.m. she was checked for a third time and found to be in the same place, but in the middle of the floor of the main cage was the newborn gorilla, still encased in the amniotic sac with about two and one-half feet of umbilical cord stringing out behind it. During all this time she had not been heard to utter an audible sound. She had a dazed, glassy expression on her face.

She was quickly locked in her rest cage. The baby was then removed from the cage floor and taken to the kitchen of the building. The amniotic sac, in which the baby was still encased,

had a grayish-white, translucent appearance, and had about a five-inch hole in it where it had apparently pulled away from the placenta. The umbilical cord passed through this hole. The cord had a loose knot in it, apparently tied *in utero*. The placenta was later found in the rest cage, with about three inches of cord attached.

The amniotic sac, which still contained a fair amount of fluid, was quickly removed. On examination, the baby did not show respiration and there was a definite cyanosis. A large, thick, mucous plug was manually extracted from the mouth. The baby was then held upside down and struck sharply on the back, with the palm of the hand. It gasped twice, then ceased to respond.

At it was getting progressively more cyanotic, artificial respiration was resorted to, by gently blowing into its mouth. After a minute or two it gasped again and began breathing erratically.

The baby proved to be a female. She was cleaned and placed in an improvised incubator consisting of a cardboard box and a 150-watt bulb, and later in a commercially built incubator for human babies. The Zoo's Veterinarian, on his arrival about an hour after the birth, tied the cord with 00 medium chromic gut and treated the umbilicus with diluted Lugol's solution.

Christina remained in her rest cage until around 1 p.m., after which she began to move about slowly. She lost blood steadily, although relatively little in relation to her size, until close to 1 p.m. From this time on the loss of blood diminished, and by 6 p.m. it had ceased. She passed some clotted blood for the next 24 hours.

About 5:30 pm. on December 22 she ate all of her evening feed. She had one normal bowel movement and urinated frequently and profusely. All the rest of that day she appeared to be nervous but quite exhausted.

She appeared depressed and lethargic for about five or six days and then gradually became more alert and active. Three weeks after parturition she had regained her pre-pregnancy level of activity and her appetite returned. She became less irritable, much more docile, and again enjoyed playing with her keepers through the bars.

After parturition the size of her lower abdomen decreased slightly. In about a week to ten days the edema in her feet and ankles had disappeared.

In approximately 36 hours after parturition her mammae became engorged and lactation began. The Zoo's Veterinarian administered 10 mg. of methyl testosterone in her feed, which brought about a cessation of lactation in about five days.

Throughout pregnancy her bowels functioned normally. By about a week after delivery the amount and frequency of urination decreased to a normal level.

About a month after delivery she began to show some sexual activity by "presenting," but when placed with the male she refused to accept him. Finally, seven months after parturition, on July 23, 1957, she accepted the male for the first time since conception early in 1956.

OBSERVATIONS ON THE INFANT

At Birth

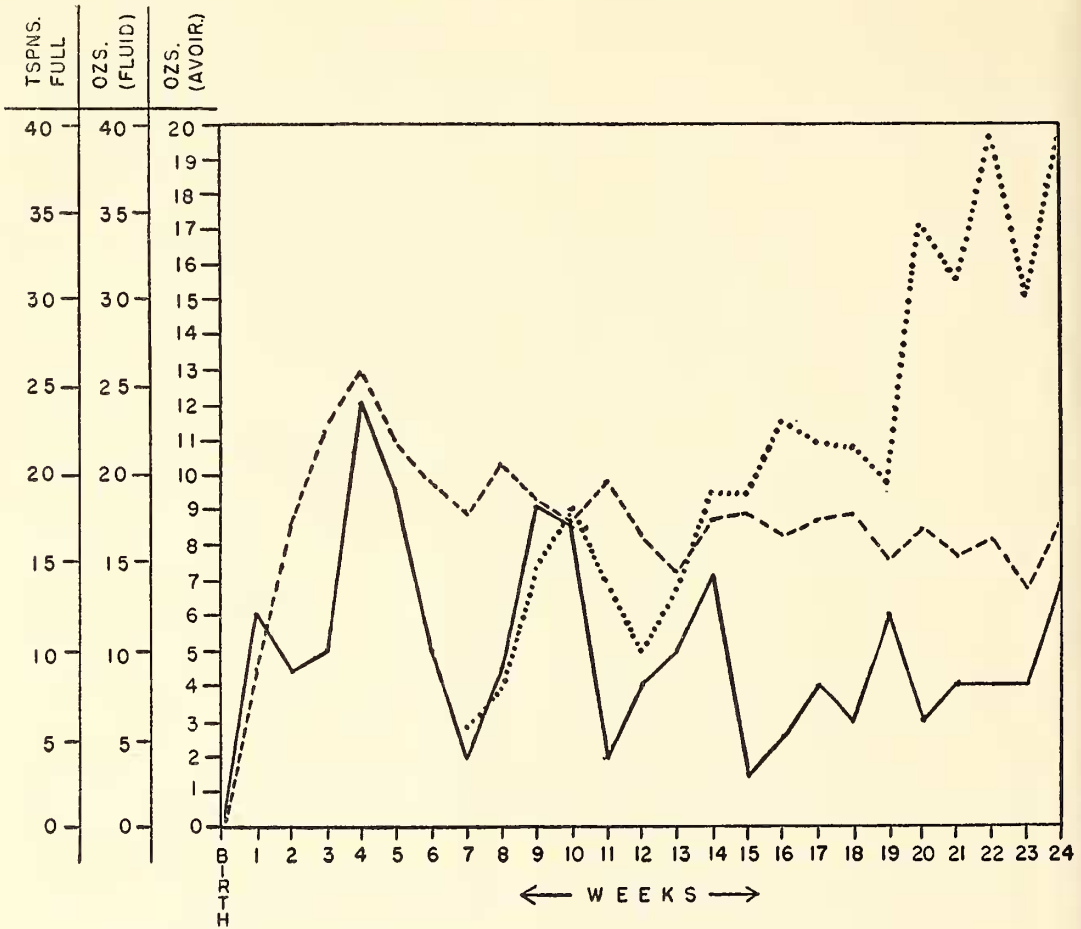
Unfortunately, no accurate measurements were taken at birth. The infant weighed approximately 4 lbs. 2 oz. and had the appearance of a shriveled mass of skin and bone (Pl. III, Fig. 5). Both size and weight were about what could have been expected (Schultz, 1945 (1950)). Her arms were quite long in proportion to the rest of the body. The legs were short and she maintained them flexed at about a 45° angle at the knee. Her head was roughly oval-shaped, sloping down in front, uninterrupted by ocular ridges, to form her face.

She did not open her eyes until about an hour after birth. Her eyes were brown. Her skin was loose and lay in wrinkles, and was of a medium chocolate-brown color. The palms of her hands, the soles of her feet and her face and chest were devoid of hair. The rest of her body, except the top of her head, was sparsely covered with black hair about half an inch long. The hair on top of her head was much denser than on the rest of her body, and was about twice as long. It also was black. Her eyebrows were sparse and measured about two and one-half inches in length. Her fingernails and toenails were even with the ends of her digits.

Her mucous membranes, which at first were blanched and slightly cyanotic, changed to the characteristic watermelon-pink color. Her genitalia had a normal appearance. The clitoris was quite enlarged. Her mammary glands were enlarged and very prominent; the nipple rested on an enlarged, button-like area of swelling which was about 17 mm. in diameter and about 3 to 4 mm. thick.

The First Six Months

Weight Gain, Growth and Food.—Several interesting points are to be noted in reference to the infant's gain in weight. During the first 24 hours her weight dropped to 3 lbs. 4 oz. After this she never had a week in which she exhibited a negative total gain. The maximum gain was 12 oz. in her 4th week, the minimum was 1½ oz.



TEXT-FIG. 1. Weight gain and food consumption of the infant lowland gorilla. Weight: **solid line** indicates total weight gain by week in ounces. Food consumption (fluid): **dash line** represents average daily

(24 hr.) consumption calculated on a weekly basis in fluid ounces. Food consumption (solid): **dotted line** represents average daily (24 hr.) consumption calculated on a weekly basis in teaspoons full.

in her 15th week when she had an attack of enteritis. Her over-all average gain was 5.1 oz. a week.

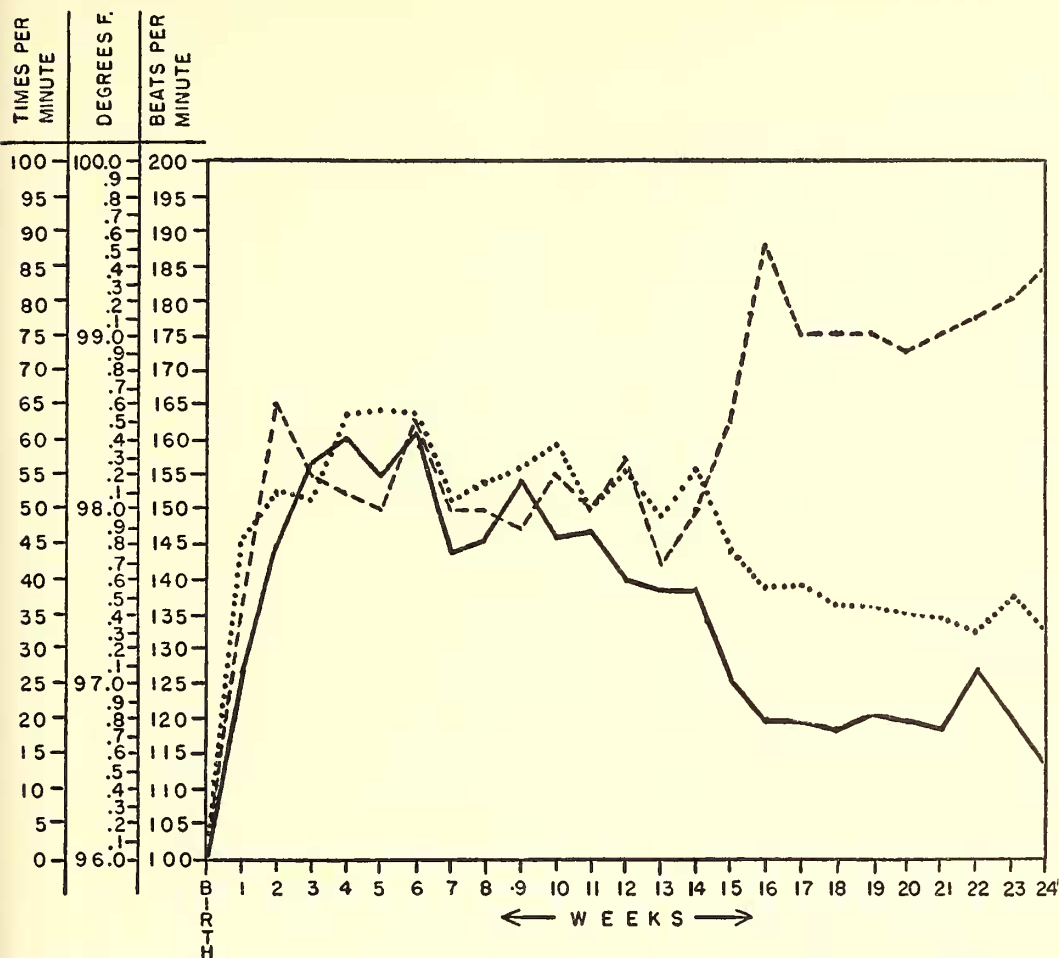
Three definite and severe drops in gain will be seen in Text-fig. 1. The first occurred during the infant's 5th, 6th and 7th weeks just before she was given solid food. The second occurred in the 11th week during a time when four teeth erupted in a period of five days. The third and most severe drop in gain came in the 15th week during the attack of enteritis.

During the first six months the baby received no water alone, only formula ("Olac," Mead Johnson) and water. It will be noted in Text-fig. 1 that her formula consumption reached its peak in the 4th week and then declined, leveling off to a relatively constant rate.

Solid food (strained baby foods and cereal) was started in her 7th week. Her appearance shortly before this time is shown in Pl. III, Fig. 6. As Text-fig 1 shows, her consumption of food increased steadily as she grew older, except during her 11th and 12th weeks when she was teething. In her 20th week there was a sharp rise in consumption. It was at this time that she was moved into new quarters which gave her a great deal more room to move around and her activity increased considerably.

During the period when she had enteritis, her fluid consumption remained fairly constant and her solids intake remained constant and then increased.

Heart Rate, Temperature and Respiration.—Her heart rate climbed steadily until her 4th



TEXT-FIG. 2. Heart rate, temperature and respiration of the infant lowland gorilla. Heart rate: **solid line** represents weekly average in beats per minute. Tem-

perature: **dash line** represents weekly average in degrees Fahrenheit. Respiration: **dotted line** represents weekly average in beats per minute.

week and from then until her 12th week it was rather erratic. There was a sharp drop during her 15th and 16th weeks, the period of enteritis during which she was relatively inactive. Her maximum was 180 beats per minute, recorded on January 28, 1957; her minimum was 100 per minute on the day after birth. See Text-fig. 2.

Her temperature rose sharply until the 2nd week. It was very erratic until the 15th and 16th weeks when it reached its maximum. After the attack of enteritis at this time the temperature was much less erratic. Maximum (rectal temperature) was 101.1° F. on April 9, 1957, and minimum was 96° F. on December 24, 1956.

Respiration reached its peak in the 5th week, was erratic for a time, and finally settled down to an even, declining rate.

Bowel and Urinary Functions.—For the most

part, bowel and urinary functions were relatively regular and normal during the first six months. There were some short periods of constipation but these were not considered significant.

Hormonal Function.—The mammary development described at birth persisted for about a month. There was no mammary secretion. At the age of four days there was a vaginal discharge of a bloody, mucoid consistency. This continued off and on until she was about two weeks old, when it ceased.

Common Integument and Its Appendages.—**Skin:** The baby's skin peeled twice during her first two months. The first time it came off in large sections, the second time in small flakes. Her skin was light to medium brown at birth but pigmentation gradually increased until, at the

age of two months, she was the characteristically purplish-black of the adult gorilla.

Hair: The hair at birth was uniformly black except for a white patch around the anus, and remained thus until she was about a month and a half old, when the hair on the top of the head began to turn lighter. At two and a half months this was light buff to dirty orange, almost identical with the hair on top of her father's head.

In her 2nd week the amount of hair on her body began to increase and at 3 months the amount and distribution were similar to the adults. The texture of the baby's hair remained soft and silky with the exception of that on top of her head, which was inclined to be bristle-like.

Dentition: The order of eruption of the deciduous teeth followed, generally, the expected pattern (Schultz, 1930). Eruption dates were:

Lower

Left Central Incisor	Jan. 30, 1957
Right Central Incisor	Jan. 30, 1957
Left Lateral Incisor	March 8, 1957
Right Lateral Incisor	March 20, 1957

Upper

Right Lateral Incisor	March 6, 1957
Right Central Incisor	March 9, 1957
Left Central Incisor	March 10, 1957
Left Lateral Incisor	February 12, 1957
Left First Molar	June 8, 1957
Right First Molar	June 8, 1957

Measurements and weight records taken at intervals during the first six months are shown in Table 2.

CARE OF THE INFANT

Feeding

Formula. — The first feeding was given nine hours after birth and the baby was started on a weak mixture of one teaspoon of Olac (Mead Johnson) to four ounces of water. This formula was maintained until the 3rd day, when she was gradually changed to a stronger mixture of one teaspoon of Olac to two ounces of water. This stronger formula then became standard, only the quantity varying. The baby did very well on such a mixture, with a minimum of digestive dis-

TABLE 2. PERIODIC MEASUREMENTS OF INFANT GORILLA DURING FIRST SIX MONTHS

Date	Head			Appendages					Trunk		Weight
	Circumference* (in mm.)	Width of Nostrils (in mm.)	Length of Ears (in mm.)	Arm Span† (in mm.)	Hand Length (in mm.)	Hand Width (in mm.)	Leg Length (in mm.)	Foot Length (in mm.)	Circum. of Chest (in mm.)	Sitting Height (in mm.)	
Jan. 6, 1957	272	..	28	554	R-80 L-81	R-38 L-39	R-206 L-206	R-88 L-89	290	282	4 lb. ½ oz.
Jan. 13, 1957	278	..	29	577	R-80 L-83	R-39 L-41.5	R-206 L-206	R-88 L-89	296	290	4 lbs. 6 oz.
Jan. 20, 1957	285	34	29	591	R-82 L-84	R-40 L-42	R-206 L-206	R-90 L-91	311	305	5 lbs. 4 oz.
Jan. 27, 1957	290	34	30	618	R-85 L-90	R-45 L-48	R-218 L-222	R-104 L-105	320	314	5 lbs. 9 oz.
Feb. 3, 1957	302	35	30	625	R-87 L-90	R-45 L-48	R-218 L-222	R-104 L-105	324	325	6 lbs.
Feb. 10, 1957	315	38	30	625	R-91 L-92	R-49 L-50	R-225 L-226	R-104 L-105	326	325	6 lbs. 2 oz.
Mar. 3, 1957	320	38	32	660	R-97 L-100	R-51 L-53	R-227 L-229	R-110 L-111	340	360	7 lbs. 3 oz.
May 5, 1957	330	41	..	690	R-108 L-110	R-52 L-53	R-... L-...	R-121 L-121	370	387	9 lbs. 11 oz.
June 8, 1957	350	46	50	695	R-108 L-111	R-54 L-55	R-231 L-236	R-124 L-124	405	395	10 lbs. 15 oz.

*Frontal-occipital measurement.

†From tip of right third digit to tip of left third digit.

turbance. She had to be "burped" at least twice during each feeding.

Solids.—Solid-food feeding was started in the 7th week. It consisted of dry cereals (Pabulum, Mead Johnson; and other types) mixed with the Olac-and-water formula. She was first given Rice Cereal, then an Oat Cereal, and finally Mixed Cereal, and took all of these very well. Prepared baby foods of strained fruits, meats and vegetables were also used. The formula was given on a demand feeding system.

Cereal and fruit were given in the morning and vegetables, meat and fruit at the evening feeding. Among the foods given were:

Chicken	Peas
Liver	Beets
Beef and beef heart	Squash
Vegetables and beef	Orange pudding
Vegetables and lamb	Custard pudding
Vegetables and liver	Bananas
Vegetables and chicken	Applesauce
Vegetables and bacon	Peaches
Lamb	Pears
Green beans	Pineapple
Spinach	Plums
Carrots	Apricots

Except for preferences in taste, she took all the foods offered very well. During her 2nd week she was started on vitamins (0.3 to 0.6 cc. ABDEC, Parke Davis).

External Environment

When first placed in the commercial incubator, the baby was kept at a temperature of 90° F. This was gradually lowered over a period of about a month to room temperature close to 70° F.

Humidity was kept relatively high, between 65% and 85%.

All bottles, nipples and the like were sterilized in boiling water. Sanitary disposable diapers were used. Disinfectant was employed liberally around the baby's quarters, an aerosol sterilizer was placed in the quarters and for the first several weeks attendants wore face masks.

From birth she was bathed in olive oil once or twice a day, and after the first month she was

bathed once a day in tepid water and mild soap.

After she was moved from her incubator, she was placed on display in a glass-fronted wooden cage. Later a permanent nursery was built for her.

About two months after birth, the baby was given the name "Col-o," in honor of the place of birth, Columbus, Ohio. Her appearance at the age of one year is shown in Pl. III, Fig. 7.

SUMMARY

On December 22, 1956, a pair of lowland gorillas, *Gorilla gorilla gorilla* (Savage & Wyman), gave birth to a healthy female baby in the Columbus Zoological Garden. It was the first recorded birth of a gorilla bred and born in captivity. The gestation period, as determined from the probable time of conception, was 257 to 259 days. At the time of the birth the male and female gorillas were, respectively, a little more than 10 and 7 years old.

The captivity history of the parents is presented, including housing and care, diet, growth changes, temperament, sexual behavior, pregnancy of the female and parturition.

The appearance, care, diet and development of the infant during its first six months are reported.

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EXPLANATION OF THE PLATES

PLATE I

- FIG. 1. Male lowland gorilla, "Baron," at the age of 10 years, on December 24, two days after the birth of Col-o. *Columbus Dispatch* photograph by Gene Wells.
- FIG. 2. Female lowland gorilla, "Christina," on December 22, 1956, two hours after the birth of her baby. Photograph by Stephen Kelley.

PLATE II

- FIG. 3. Dorso-ventral position in coitus. Photograph by Phillip Amorose.

- FIG. 4. Ventro-ventral position in coitus. Photograph by Phillip Amorose.

PLATE III

- FIG. 5. The infant gorilla, "Col-o," 15 minutes after birth. Photograph by Stephen Kelley.
- FIG. 6. Col-o at the age of 4 weeks. *Columbus Dispatch* photograph by Tom Richards.
- FIG. 7. Col-o at the age of 1 year. Photograph by Dr. N. Ebert.